

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

**MORPHOMETRIC:**

Lake: WICWAS LAKE	Lake Area (ha):	132.62
Town: MEREDITH	Maximum depth (m):	10.9
County: Belknap	Mean depth (m):	3.9
River Basin: Merrimack	Volume (m <sup>3</sup> ):	5110500
Latitude: 43°36'56" N	Relative depth:	0.8
Longitude: 71°33'10" W	Shore configuration:	2.33
Elevation (ft): 502	Areal water load (m/yr):	7.86
Shore length (m): 9500	Flushing rate (yr <sup>-1</sup> ):	2.00
Watershed area (ha): 2149.7	P retention coeff.:	0.58
% watershed ponded: 0.3	Lake type:	natural w/dam

**BIOLOGICAL:**

3 January 1994

23 August 1993

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 70%	ASTERIONELLA 25%
	#2	TABELLARIA 25%	TABELLARIA 20%
	#3		CERATIUM 20%
PHYTOPLANKTON ABUNDANCE (cells/mL)			495
CHLOROPHYLL-A (µg/L)			3.67
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 72%	KELICOTTIA 33%
	#2	KELICOTTIA 7%	NAUPLIUS LARVA 22%
	#3	NAUPLIUS LARVA 5%	POLYARTHRA 15%
ROTIFERS/LITER		157	63
MICROCRUSTACEA/LITER		20	28
ZOOPLANKTON ABUNDANCE (#/L)		181	100
VASCULAR PLANT ABUNDANCE			Common/Abun
SECCHI DISK TRANSPARENCY (m)			4.3
BOTTOM DISSOLVED OXYGEN (mg/L)		8.5	0.3
BACTERIA (E. coli, #/100 ml)	#1		2
	#2		1
	#3		

**SUMMER THERMAL STRATIFICATION:**

stratified

Depth of thermocline (m):	6.0
Hypolimnion volume (m <sup>3</sup> ):	28000
Anoxic volume (m <sup>3</sup> ):	429000

**CHEMICAL:**

Lake: WICWAS LAKE

Town: MEREDITH

	3 January 1994		23 August 1993		
DEPTH (m)	3.5	7.0	2.5	7.0	9.5
pH (units)	6.6	6.6	6.9	6.2	6.5
A.N.C. (Alkalinity)	4.6	5.0	6.0	7.8	16.1
NITRATE NITROGEN	< 0.02	< 0.02	< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.20	0.30	0.16	0.26	0.61
TOTAL PHOSPHORUS	<0.001	<0.001	0.016	0.018	0.035
CONDUCTIVITY ( $\mu$ mhos/cm)	52.0	53.4	52.0	55.4	71.1
APPARENT COLOR (cpu)	23	24	22	34	200
MAGNESIUM			0.51		
CALCIUM			2.6		
SODIUM			6.0		
POTASSIUM			< 0.40		
CHLORIDE	9	9	9		11
SULFATE	4	4	3		2
TN : TP			10		17
CALCITE SATURATION INDEX			3.2		

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 1993**

D.O. S.D. PLANT CHL TOTAL CLASS

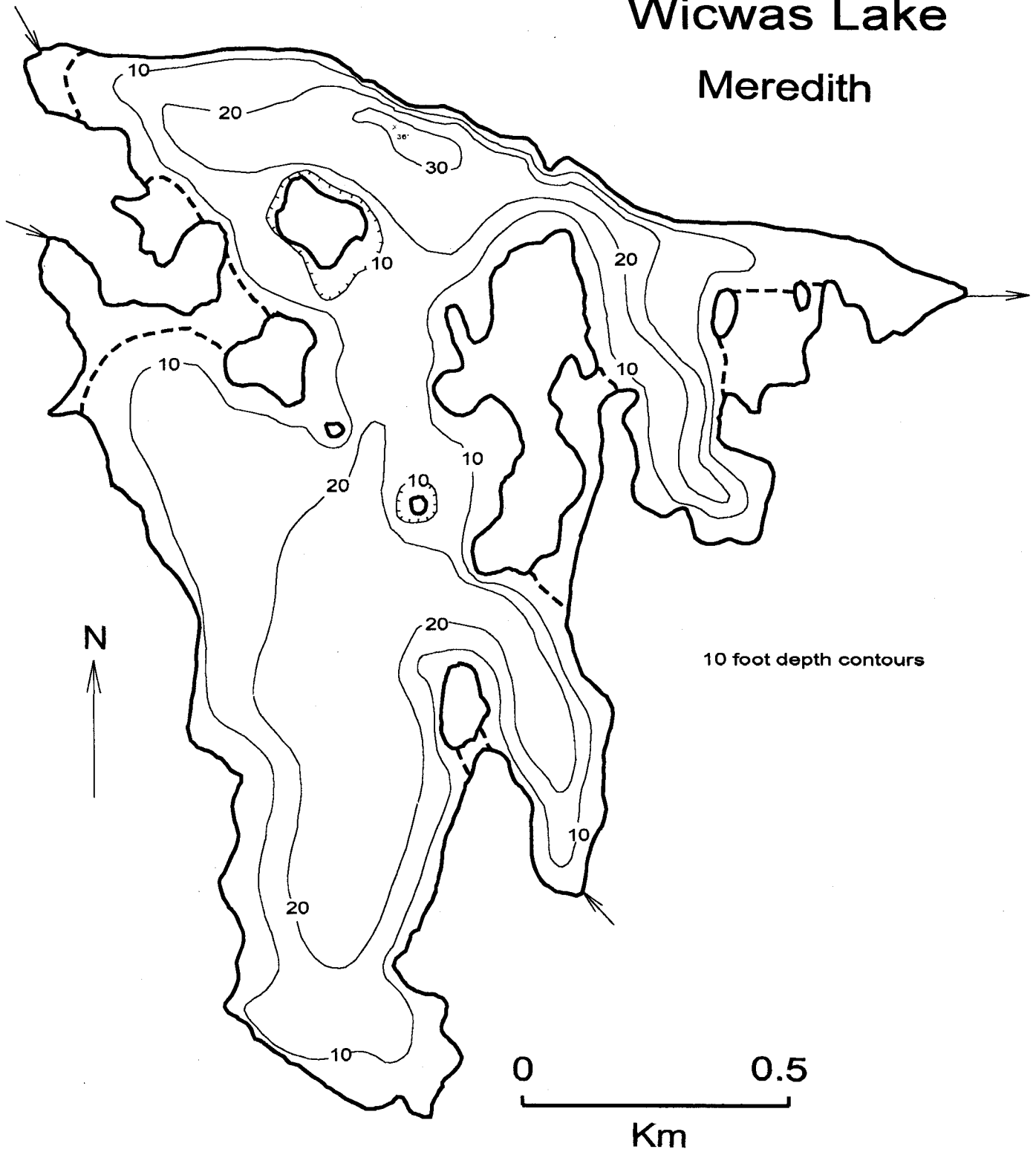
4	2	4	0	10	Meso.
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**COMMENTS:**

- Also spelled Wickwas Pond; at one time know as Nigger Pond.
- This pond was previously surveyed and classified in 1978. There was no change in trophic classification but some differences were noted in some water quality parameters. The rooted plants appeared to be somewhat more abundant in 1993, particularly along the southern and southwestern shoreline that had only scattered plant growth in 1978. The chlorophyll was less and the water clarity was better in 1993 but the differences may be within natural yearly variations. More frequently collected data is needed to confirm trends, and this data is available through DES' Volunteer Lake Assessment Program. Although even this data is limited, the four years of data currently show a stable chlorophyll level and an improving trend in water clarity. The importance of frequently collected data to discern water quality trends cannot be overemphasized.
- Cottages are common around the lake, more numerous than in 1978.
- Chroomonas (25%) and Ankistrodesmus (15%) were the dominant genera of wholewater phytoplankton.

# Wicwas Lake

Meredith



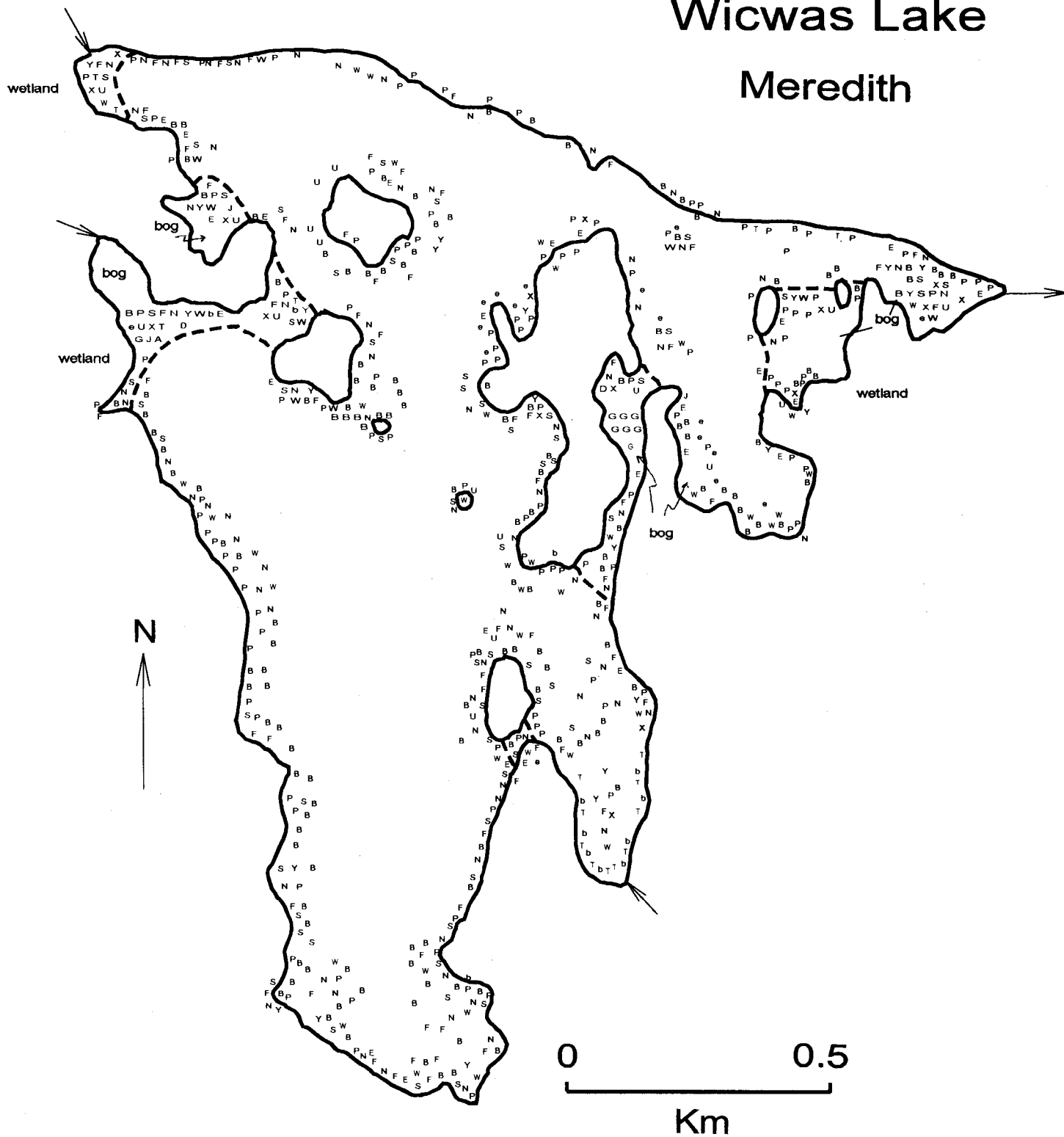
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**COMMENTS :**

**\*Dissolved oxygen values are in mg/L**

# Wicwas Lake

Meredith



# AQUATIC PLANT SURVEY

LAKE: WICWAS LAKE

TOWN: MEREDITH

DATE: 08/23/93

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
B	Brasenia schreberi	Water shield	Common/Abun
P	Pontederia cordata	Pickereelweed	Common
S	Sparganium	Bur reed	Common
F	Nymphoides cordatum	Floating heart	Scat/Common
N	Nymphaea	White water lily	Common
Y	Nuphar	Yellow water lily	Sparse
W	Potamogeton	Pondweed	Common
b	Scirpus	Bulrush	Sparse
E	Eriocaulon septangulare	Pipewort	Scattered
e	Elodea nuttallii	Waterweed	Sparse
U	Utricularia	Bladderwort	Common
X		Sterile thread-like leaf	Common
T	Typha	Cattail	Sparse
D	Decodon verticillatus	Swamp loosestrife	Scattered
G	Gramineae	Grass family	Common
J	Juncus	Rush	Scattered
A	Sagittaria	Arrowhead	Sparse

**OVERALL ABUNDANCE: Common/Abun**

## GENERAL OBSERVATIONS:

- Plants were abundant at the northern end of the lake, particularly in the inlet coves at the northwestern end and in the coves near the outlet.
- There were a number of bog areas in the northern end, consisting of sedges, rushes, grasses and other wetland plants. In many cases the islands are connected to the mainland by wetland areas that do not allow navigation through them.
- Freshwater sponges were observed.
- Filamentous green algae were scattered in various areas of the pond.